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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,571	05/07/2007	Harry E. Orton	0091 0017/BMG	4125
720 7590 11/28/2008 OYEN, WIGGS, GREEN & MUTALA LLP 480 - THE STATION 601 WEST CORDOVA STREET VANCOUVER, BC V6B 1G1 CANADA				
EXAMINER				
DOLE, TIMOTHY J				
ART UNIT		PAPER NUMBER		
2831				
MAIL DATE		DELIVERY MODE		
11/28/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,571

Applicant(s)

ORTON, HARRY E.

Examiner

TIMOTHY J. DOLE

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 20 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3/1, 4/3/1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by
Alles et al. (US 6,525,918).

Referring to claims 1 and 9, Alles et al. discloses a system and tool for diagnosing degradation of a plurality of wires (fig. 5) in an electrical system having plurality of loads (fig. 5 (72) and (76)) connected by the plurality of wires to a direct current power source (fig. 5 (14)), the plurality of wires arranged into a bundle near the power source (fig. 5), the system comprising: a current sensor (fig. 5 (26)) located proximate to the bundle for producing a signal representative of a current in the bundle; a signal processor (fig. 5 (22)) coupled to the sensor to receive the signal from the current sensor; a pattern database (column 3, lines 49-51) coupled to the signal processor to provide the signal processor with expected patterns of currents drawn by the plurality of loads (column 4, lines 21-24) and patterns of arcs which may occur in the plurality of wires (column 4, lines 28-31); and, an output device (column 4, lines 36-39: vehicle main computer)

coupled to the signal processor to receive an indication of a location at which an arc occurred in the plurality of wires (column 4, lines 36-39).

Referring to claim 3/1, Alles et al. discloses the system as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)).

Referring to claim 4/3/1, Alles et al. discloses the system as claimed wherein the output device comprises a CPU of the mobile vehicle (column 4, lines 36-39: vehicle main computer).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3/2 and 4/3/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Ishiko et al. (US 4,999,571).

Referring to claim 2, Alles et al. discloses the system as claimed except wherein the current sensor comprises an optical current sensor.

Ishiko et al. discloses an optical current sensor (fig. 5 (4)) for sensing the current through a wire (fig. 5 (9)).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the optical current sensor of Ishiko et al. into the system of Alles

et al. for the purpose of providing a reliable, well-known, noninvasive current sensor (column 3, line 52 – column 4, line 11).

Referring to claim 3/2, Alles et al. discloses the system as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)).

Referring to claim 4/3/2, Alles et al. discloses the system as claimed wherein the output device comprises a CPU of the mobile vehicle (column 4, lines 36-39: vehicle main computer).

5. Claim 5/3/1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Zur et al. (6,590,396).

Referring to claim 5/3/1, Alles et al. discloses the system as claimed except wherein the output device comprises a display on a dashboard of the mobile vehicle.

Zur et al. discloses a system for monitoring battery discharge in a vehicle wherein the output device comprises a display on a dashboard of the mobile vehicle (column 9, lines 11-22).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the display of Zur et al. into the system of Alles et al. for the purpose of providing current information to a vehicle's user.

6. Claim 5/3/2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Ishiko et al. (shown above) as applied to claim 3/2 above, and further in view of Zur et al. (6,590,396).

Referring to claim 5/3/2, Alles et al. as modified discloses the system as claimed except wherein the output device comprises a display on a dashboard of the mobile vehicle.

Zur et al. discloses a system for monitoring battery discharge in a vehicle wherein the output device comprises a display on a dashboard of the mobile vehicle (column 9, lines 11-22).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the display of Zur et al. into the system of Alles et al. as modified for the purpose of providing current information to a vehicle's user.

7. Claims 6, 7 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Hale et al. (US 7,236,338).

Referring to claim 6, Alles et al. discloses a method for diagnosing degradation of a plurality of wires (fig. 5) in an electrical system (fig. 5 (12')) having plurality of loads (fig. 5 (72) and (76)) connected by the plurality of wires to a direct current power source (fig. 5 (14)), the plurality of wires arranged into a bundle near the power source (fig. 5), the method comprising: placing a current sensor (fig. 5 (26)) proximate to the bundle for producing a signal representative of a current in the bundle (fig. 5); monitoring a time-rate-of-change of the signal from the current sensor (column 4, lines 14-15); comparing the time-rate-of-change of the signal from the current sensor to expected patterns of currents drawn by the plurality of loads (column 4, lines 21-24) and patterns of arcs which may occur in the plurality of wires (column 4, lines 28-31); and, producing an

indication of a location at which an arc occurred in the plurality of wires (column 4, lines 36-39).

Alles et al. does not disclose the arc location is produced by applying time domain reflectometry.

Hale et al. discloses a method of locating faults in a power system (abstract) by applying time domain reflectometry (column 6, lines 45-54).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the time domain reflectometry method of Hale et al. into the method of Alles et al. for the purpose of being able to detect and locate multiple cable conditions (column 10, lines 26-30).

Referring to claim 7, Alles et al. discloses the method as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)), the method further comprising providing the indication of the location at which the arc occurred to a CPU of the mobile vehicle (column 4, lines 36-39: vehicle main computer).

Referring to claims 10 and 11, Alles et al. discloses the system and tool as claimed wherein upon detection of a pattern indicative of an arc in the signal from the current sensor, the signal processor monitors the signal from the current sensor and produces the indication of the location at which the arc occurred (column 4, lines 36-39).

Alles et al. does not disclose using time domain reflectometry for determining the location at which the arc occurred.

Hale et al. discloses using time domain reflectometry for determining the location at which the arc occurred (column 6, lines 45-54 and column 9, line 65 - column 10, line 10).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the time domain reflectometry of Hale et al. into the system and tool of Alles et al. for the purpose of being able to detect and locate multiple cable conditions (column 10, lines 26-30).

Referring to claim 12, Alles et al. discloses the method as claimed wherein upon detection of an arc pattern in the signal from the current sensor, monitoring the time-rate-of-change of the signal from the current sensor (column 4, lines 14-15) to determine the location of the arc (column 4, lines 36-39).

Alles et al. does not disclose the arc location is produced by applying time domain reflectometry.

Hale et al. discloses a method of locating faults in a power system (abstract) by applying time domain reflectometry (column 6, lines 45-54 and column 9, line 65 - column 10, line 10).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the time domain reflectometry method of Hale et al. into the method of Alles et al. for the purpose of being able to detect and locate multiple cable conditions (column 10, lines 26-30).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alles et al. (shown above) in view of Hale et al. (shown above) as applied to claim 6 above, and further in view of Zur et al. (6,590,396).

Referring to claim 8, Alles et al. as modified discloses the method as claimed wherein the electrical system comprises a mobile vehicle's (fig. 1 (10)) electrical system (fig. 1 (12)).

Alles et al. does not disclose method further comprising displaying the indication of the location at which the arc occurred on a dashboard of the mobile vehicle.

Zur et al. discloses a method for displaying the indication of the location at which the arc occurred on a dashboard of the mobile vehicle (column 9, lines 11-22).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the display method of Zur et al. into the method of Alles et al. as modified for the purpose of providing current information to a vehicle's user.

Response to Arguments

9. Applicant's arguments filed September 22, 2008 have been fully considered but they are not persuasive.

10. In response to Applicants' arguments with respect to independent claims 1, 6, and 9, that Alles et al. does not disclose a current sensor located proximate to the bundle for producing a signal representative of a current in the bundle (page 7, last paragraph), the Examiner respectfully disagrees. It should first be noted that "proximate", according to dictionary.com, may be defined as "near, close or next to". It should also be noted that the claimed bundle is

considered to be at the location where the current 21 branches off into paths 70 and 74, wherein a plurality of wires are connected together, or bundled. As shown in figure 5 of Alles et al., the current sensor is positioned near the location where paths 70 and 74 branch off. Therefore Alles et al. is considered to disclose a current sensor located proximate to the bundle for producing a signal representative of a current in the bundle, as claimed and shown in the rejection above.

11. In response to Applicants' argument with respect to claims 1 and 9, that Alles et al. teaches away from a current sensor located proximate to the bundle for producing a signal representative of a current in the bundle (page 8, first paragraph), it should be noted that Applicant is referencing figure 6 of Alles et al., which is different than the embodiment used for the rejection. It is improper to argue that Alles et al. teaches away from the present application by referring to embodiments of Alles et al. that were not used as prior art for the rejection of the claims. The rejection above is based on figure 5 of Alles et al. which discloses the limitations as claimed.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY J. DOLE whose telephone number is (571)272-2229. The examiner can normally be reached on Mon. thru Fri. from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy J. Dole/
Primary Examiner, Art Unit 2831